Belt and Road Investment in Africa: Mining, Transport, and Telecom

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Abstract

This article analyzes the impact of “One Belt, One Road” Initiative, or “The Belt and Road Initiative" (BRI), that China has aggressively embarked on since 2013, focusing on Africa. Through the use of 3 examples, it demonstrates that the positive impact of these initiatives has been heavily skewed towards China, leaving the African countries and their respective populations worse off than before. This paper highlights China’s growing clout with the ruling elite in African nations, Chinese political and economic control over the continent, and how control could be more detrimental to future developments in the region. The paper further explains how Chinese ownership and operation of mines to extract metals, crucial to the world economy and industry, have morphed themselves to establish China’s dominance of Africa economically and geopolitically. The rise of the digital economy of Africa, under Chinese domination, and the authoritarian practices of digital surveillance and control resulting from this rise are also discussed. As a way to restore equity for the African nations and better trade participation by other countries in the world, this paper argues for the establishment of robust political and economic institutions, better bilateral trade agreements, and a better sharing of experiences and expertise between African nations.

Introduction

Chinese investments in developing and underdeveloped countries have recently come under increased scrutiny. Since 2013, investment has exceeded $1 Tr in aggregate - across the Middle East, Asia (South and South East), and importantly Africa (Wall Street Journal). The true intent of this investment has always been a question. Early Chinese interests in mineral resources in Africa stemmed their goal to satisfy the growing domestic needs. Through the ensuing period, while it fulfilled most of that need, it also morphed into a private and state partnership that became central to Chinese foreign policy dubbed “One Belt, One Road”, the Belt and Road Initiative, or BRI as it is referred to in most Western media. BRI helped pave the way to investing in various parts of the world, most notably in poor mineral-rich countries which were finding it hard to obtain loans and grants through regular international channels due to their general inability to meet “global” lending standards, or due to their political environments not being deemed stable enough for developed countries to lend. China, however, felt comfortable operating in such uncertainty, and over a decade ago, launched this bold initiative following the directive from their then recently elected Chairman Xi Jinping.

This article looks at selected Chinese BRI investments in key African regions to illustrate how they have influenced the economy, politics, and domestic conditions. Through this research, I find that BRI has led to outsided benefits to China and the consumers of its finished products, which are mainly Western economies, at the expense of African nations. Each of these successes has led to several African countries being exploited, and their populations being nowhere close to realizing the benefit of living in a mineral-rich region. While some of this can be attributed to local fragile political conditions in African nations as they started emerging from challenging socio-economic conditions due to regional conflicts, a significant portion of which can also be attributed to loan covenants and contracts China used to establish itself as a dominant player in these regions.

This paper provides examples of BRI in two countries - the Democratic Republic of Congo (DRC) and Tanzania - which represent two very specific investment cases, but a similar modus operandi that is evident in all BRI initiatives. This paper will also look at an additional example which transcends national boundaries in Africa: investment by the Chinese company Huawei in Africa’s digital infrastructure.

The DRC was one of the initiatives undertaken through BRI, where Chinese private and public investments have led to direct ownership of Cobalt mines, as well as indirect ownership of the so-called “Artisanal Mines.” As a part of this investment, China has come to dominate the processing, refining, and delivering Cobalt to the world. While this ownership and control of critical resources and supply chain allows China to “secure” its resource needs for the years to come, it has been at the expense of DRC, which is now severely indebted to China through opaque contracting. China has disproportionately benefited from opaque contracting practices, leaving DRC just as impoverished as it was prior to these investments.

Tanzania, on the other hand, has been one of the earliest African relationships China has cherished since the early 1960s. The relationship was built as each country was coming out of their respective decades long struggle, looking to create an identity for itself as an independent nation. Tanzania was one of the first to recognize the People's Republic of China (PRC) as a new nation, separate from modern day Taiwan. Over the years, China has invested heavily in Tanzania in building transportation infrastructure - railroads, ports, electricity, and other communication infrastructure through structured loan programs. Looking back, these loans were also along the same lines as loans given since the launch of BRI. Tanzania and its connectivity to east African countries has been of strategic importance for China. It continues to invest in developing, maintaining, and operating these investments to this day.

The third example of BRI that I will address in this paper is quite different: it is about the central role China has come to play in the world's digital infrastructure. We demonstrate this through the analysis of Huawei, a Chinese domiciled company, which has come to be one of the key providers of the modern digital infrastructure for the whole world. In many countries across Africa and Asia, they are sometimes the only provider of such infrastructure. However, this monopoly has led to a single company, which is generally known for unscrupulous practices, owning the digital data infrastructure, processing such data, and enabling the future digital economy for the African continent. This oversized Chinese influence also allegedly supports authoritarian practices such as state surveillance in these emerging economies.

The thesis of this paper is that BRI, which was originally intended to help China address its domestic needs and establish itself as a key regional player, has become a key foreign policy tool that China is using to establish its economic dominance globally, specifically in developing countries in Africa. There are serious doubts about whether these investments are leading to any benefits to Africa. This paper looks at three specific BRI investments - in the mineral mining sector in the DRC, the transportation sector in Tanzania, and the more recent investments in the so-called "digital silk road" via backing Huawei, which has come to dominate the telecommunications sector in several parts of the world. Almost all of these investments are through loan programs, often in owning and operating infrastructure projects, which have been known to be financially weak propositions even in their early stages. China's main reason for continuing to invest in these and several such projects here and in other parts of the world is simply to gain leverage over the countries that are now deeply indebted to China. China is thus using these loan programs to not only gain access to key natural resources important for the energy economy of today – and the sustainable transition economy of the future – but also to use its political influence over the loaned countries to propagate its political agenda.

I. Background and Context

The Symposium on Peripheral Diplomacy Work held in Beijing in October 2013 is broadly considered the first real revelation of China expanding its interests in neighboring regions. In a speech at the symposium, General Secretary Xi Jinping of the Chinese Communist Party (CCP) said, "... It is necessary to focus on deepening the pattern of mutual benefit and win-win results, actively participate in regional economic cooperation, accelerate the interconnection of infrastructure, build the Silk Road Economic Belt and the 21st Century Maritime Silk Road, and build a new pattern of regional economic integration…". (Xinhuanet). And thus was born the "One Belt, One Road" initiative, more commonly known the "The Belt and Road Initiative," or BRI, which initially aimed at addressing two key objectives - 1) the burgeoning domestic economics woes in border provinces, which were lagging behind other developed regions of the country, and 2) the recognition that China could broadly benefit from increasing its influence in Asia and South East Asia for geopolitical reasons (Cai). Over the last decade, it has transformed into one of the most influential geopolitical and geoeconomic strategies put in place by the PRC. While several Asian neighbors of the PRC have been a part of BRI and have seen its impact in one way or another, its singular impact is now clearly visible in Africa. BRI today is viewed by several experts as perhaps one of the key programs, if not the key program, which is playing a crucial role in PRC's domestic future and perhaps that of the rest of the world.

In the last four decades, China has grown from being a relatively poor developing country with a differentiated communist manifesto, compared to its senior northern neighbor Russia, to representing a quarter of the world GDP growth during this period. This remarkable transformation can be attributed to both the conducive demographic profile of the country, which has boasted a disproportionately young population over the last four decades; the establishment of economic zones powered by investments to create a new kind of state-sponsored capitalism; and the insatiable appetite for the rest of the world to increase economic growth through globalization. Whatever the main driving force, China has become a vital partner of every developed and developing nation on planet Earth (Miller 271).

China's rise as an economic superpower and developed economy occurred simultaneously as countries in the Global South were facing a lack of investment. Most African countries emerged from the colonial period through their long independence struggles, lacking proper institutions and infrastructure to ensure a decent future for their populations. Most Western countries and institutions deemed Africa unfit for systematic investment. This left a void which, in the decades following the 1950s, China filled.

A decade since its inception, BRI has touched over 150 countries, representing more than 75% of the world population - from Brazil, to the African Union, to Laos, and to Cambodia. The total value of the investment has reached $1 trillion. While the investments have mainly been in infrastructure projects, they have also expanded recently in controlling supply chains for significant resources needed to sustain the world economy, including the energy transition economy (Cai).

While several of the projects that have been initiated, and some have been completed, do support the original intent of securing domestic needs, they have most evolved towards becoming a tool of foreign policy. Much of the negative press has been alluding to dodgy lending practices from private and state-owned Chinese banks, which enabled China to continue pumping money into these infrastructure initiatives even though several borrowing countries have struggled to repay the investments. Alongside these financial arguments, there are also viable allegations of violations of established international standards of business and human rights practices.

II. Case Studies

The following sections of this paper explores three case studies of Chinese investments through the BRI. Through these examples, which are representative of typical BRI investments, this paper argues that these investments have been chiefly self-serving and have primarily become a foreign policy tool for China. They have also led to exploitation of natural resources in African countries, which have continued to become more indebted to Chinese private and state-owned institutions.

A. Mining in the DRC

The history of modern-day DRC is fraught with struggles, occupations, and civil wars. From its early days of The Congo Free State to the colonial Belgian Congo, to the Republic of Congo, to Zaire, and finally to the Democratic Republic of Congo (DRC), the country had gone through multiple convulsive periods that essentially left it devastated as it entered the new millennium. As the country emerged in 1960 as an independent nation, it was known for its mineral-rich land, primarily for copper and diamonds. Over the years, it became a primary source of other minerals - iron, germanium, copper, cobalt, zinc, and several rare metals like palladium, uranium, and platinum. The early years of independence also saw financial institutions, such as the World Bank and the IMF, not enabling proper loan programs to stabilize the DRC, which opened up investments from the USSR and China, as part of their broader Cold War strategy. Early European influence in the DRC dwindled with the decline in the Belgian empire and its economic interests in Africa. The collapse of the USSR left China as the only key player continuing to invest in the country (Britannica).

Today, the DRC has become a vital staging ground for investment because battery storage is a critical driver of energy and electrification globally. Cobalt is an essential element in the development of advanced batteries. While there are other non-cobalt technologies that companies like Tesla are exploring, these technologies are not yet pervasive or financially competitive. Furthermore, most of these technologies have garnered interest as a reaction to the broader backlash due to reports of domestic mining practices in the DRC since the early 2000s.

Mining in DRC, especially for copper and cobalt, has been a great example illustrating the Chinese BRI strategy and its impact. Global Cobalt mining grew from roughly 40 000 metric tonnes in the year 2000 to nearly 130 000 metric tonnes in 2020. Most of this production is accounted for by “Industrial Mines” - the large-scale mining operations which operate under stricter protocols. However, China’s entrance into DRC was mainly for acquiring and operating smaller mines - the so-called “Artisanal Mines,” which are much smaller scale operations, often managed by small groups which individually do not amount to much, but collectively have amounted to a vast percentage of Chinese consumed cobalt ore (as large as 80% in mid 2000s!). A combination of bank loans and state-sponsored ownerships of these artisanal mines has increased the supply chain efficiency, which today account for the collection, transportation and refining of all cobalt ore, industrial and artisanal. The artisanal share of worldwide production fell from over 50% in 2005 to lower teens in 2020. However, during the same time, the proportion of ore flowing through Chinese-owned supply chains and refineries to the finished products in batteries and EVs worldwide is now greater than 80%. From a manufacturing perspective, it is hard to separate China from copper and Cobalt used by the world (China Global South).

On a per capita basis, China is not the dominant mine owner or producer. However, China is dominant if you take the entire ecosystem - mining, transportation, logistics, shipping, processing, and end product consumption in digital and storage devices. A significant part of this dominance is due to Chinese investment in infrastructure - roads, transportation, shipping, and refineries, along with appropriate state support.

The artisanal mining investments are rife with human rights abuses and exploitation of local populations, often disregarding environmental impact. As it is, there is very little regulation in these countries. Another side effect of these mining towns is the continued use of child labor, which is often cheap (China Global South). There are cases reported where women and young girls are made to work in toxic environments, even while pregnant. Small kids and teenage boys often work in perilous conditions like narrow shafts (Niarchos). While it may be argued that this is no different from the exploitation of people and natural resources in the 19th and 20th-century colonial era, we cannot take such matters so lightly in the 21st century, where countries are held to a much higher standard in matters of human rights and environmental regulation. Politicians and security organizations from Chinese companies have been reported to treat local workers who have no choice but to work in these mines with utmost disdain and disrespect. Even children under the age of 12 are known to work in some artisan mines for 12 hours at a stretch - often with prolonged exposure to toxic materials. There is ample evidence that the local conditions like schools, sanitation, healthcare, and other benefits have not changed for the better in rural areas of the DRC since the Chinese started investing in these regions. Local populations are generally deprived of job opportunities (Human Rights Watch).

Efforts by the DRC government have been inadequate to improve conditions in the mines and benefits for Congolese citizens. However, there is ample proof that the political elite in the DRC have benefited from BRI initiatives greatly. Recent visits by ministerial class DRC members to Beijing have been viewed as general appeasements to squash the few human rights and environmental concerns being raised by NGOs. The DRC remains one of the poorest countries in the world today despite large amounts of Chinese investment (The Economist).

Mining company ownership is quite fragmented. There are large functional DRC-owned mines and smaller mines co-owned through Chinese investments. While it is not entirely correct to bundle private companies, state-sponsored companies, and artisan mines into the same bucket, it is crucial to recognize that there is a fantastic consistency in how they operate (China Global South). Almost all the ore goes through supply chains owned and operated by Chinese companies. It is hard to trace back the origins of the refined product to specific mines due to how integrated the supply chains are. Supply chain efficiency is a crucial aspect of generating profitability in mines. All these efficiencies are provided through Chinese-owned infrastructure.

The loan covenants and operations contacts with DRC have also been scrutinized and criticized for their poor terms and inherent secrecy. Chinese investors and creditors were not able to realize positive returns even though demand was high and price pressures were low. But, when price pressures mounted, or there were shocks to the economy that made it harder for DRC to make loan payments, the covenants were restructured to provide a greater share of the current and future output to the Chinese banks and PRC. Some of these contracts are said to be so secretive that nobody outside the signatories is aware of the details - until events that hamper payments being made happen. Post recent backlash where end-consumers of the mining operations - namely battery, cell phone, and EV manufacturers - got dragged into the accountability equation of these questionable practices in DRC, CCP has courted state-level visits with DRC political leadership to appease them. While there has been some attempt at renegotiating various aspects of the mining/loans contract, it is unclear if this eventual benefit will lead to better conditions for domestic workers and a discontinuation of the practices they employ (Council of Foreign Affairs).

Overall, it is clear that the investment by the Chinese in DRC mines is not beneficial for Congolese citizens. Workers in the mines face unsafe conditions, and mining is detrimental to the local environment. The Chinese companies do not invest in other social measures to raise living standards. The DRC government is bound to terms that do not benefit them and do not ensure that human rights are respected (The Economist).

B. Transportation Infrastructure in Tanzania

Another African country which has been considered a friend of China for several decades is Tanzania. Following its emergence from being a German colony in the 1800s to becoming a British colony during World War I, and finally becoming the unified state it is today through the unification of the territories of Tanganyika and Zanzibar, Tanzania found itself in almost a similar place as China emerging from its general struggles of identifying itself as the People's Republic of China. Both countries take pride in their political and economic relations as one of the first between China and the African continent. They have indeed remained strong since then. The political and economic ties with several African nations since the early 1960s is considered one of the key supports the PRC received in establishing itself as a permanent member of the UN Security Council through a referendum in 1971. Tanzania was a big supporter through that process. Early investments in Tanzania were also through generous loan programs. But, at that time, they were thought to be aimed at enabling the transition of Tanzania into a middle-income country (Britannica).

The first big infrastructure project, and perhaps the biggest yet in Tanzania, was the Chinese-sponsored building of the Tazara Railway. It is a 1,860 km long railway from Dar es Salaam, Tanzania, to Kaprimposhi, Zambia, to link Central and Southern Africa with East Africa to facilitate trade, tourism, and inter-state cooperation. Since its completion in the mid 1970s and continuing through the BRI initiative since 2013, China has continued technical and financial support for the Tazara by funding and upgrading the railway to achieve increased operational efficiency to help meet growing passenger and trade demand. This has become an over $500 Mn investment by China (Zawya).

The relationship between the two countries was transformed through the announcement of BRI in 2013. The initiative includes building and financing railways, highways, power grids, gas and oil pipelines, telecommunications infrastructure, industrial parks, special economic zones, shipping facilities, information technology, alternative energy sectors, and more. As with other African investments, the Chinese government and Chinese companies coordinate these efforts with Tanzanian stakeholders through free trade agreements, generous lines of credit, and other measures intended to generate an investment-friendly environment for foreign investors, primarily focusing on enabling China (Otele).

The Chinese government and the three successive governments of Tanzania led by President Jakaya Kikwete, the late President John Magufuli, and President Samia Suluhu Hassan have been firmly supporting each other, increasing high-level exchanges and promoting synergy between the BRI and Tanzania Development Vision 2025.

In particular, during President Samia's historic visit to China in November 2022, the heads of state jointly announced the elevation of China-Tanzania relations to a comprehensive strategic cooperative partnership. They agreed to deepen the high-quality Belt and Road cooperation between the two countries, advance cooperation projects on infrastructure, enhance industrial complementarity and production capacity cooperation, expand mutually-beneficial collaboration in manufacturing and processing, green development, and digital economy (China Foreign Relations).

Chinese firms have participated in such strategic infrastructure projects as the Standard Gauge Railway (SGR), Julius Nyerere Hydropower Station, the East African Crude Oil Pipeline (EACOP), the J.P. Magufuli Bridge, Mtwara-Dar es Salaam Natural Gas Pipeline, Upgrading and Expansion of Dar es Salaam Port, Terminal 3 of Abeid Amani Karume International Airport in Zanzibar, Tanzanite Bridge in Dar es Salaam, and the National ICT Broadband Backbone Network (NICTBB), which are all a significant part of infrastructure in Tanzania. Currently, China, Tanzania, and Zambia are exploring ways to revitalize the TAZARA Railway.

The Bagamoyo Port Construction came into the limelight when it became only the second big BRI project canceled in Africa by a country claiming unfair trade deals (Agrahari and Mishra). It was disputed on the grounds that the agreement between the two countries had stipulated that only China would have the right to say who could use the port. The Tanzanian government canceled the project in response. If it had gone through as planned, it would have been another version of the harbor/port ownership in Hambantota, Sri Lanka, where the port is leased to China for 99 years. This would have led to China controlling all port traffic for one of the key ports for trade with the African continent. After this episode in 2019, several high-level Tanzanian government officials visited China, which seemed to have appeased their angst. Recently, China announced another round of infrastructure investments. So, the process appears to continue. In 2022, Tanzania announced another significant Chinese investment in a railway construction project - The 2,561-kilometer (1,600-mile) railway line to link the Indian Ocean port of Dar es Salaam to Mwanza on Lake Victoria, with eventual spurs to Burundi, Democratic Republic of Congo (DRC), Rwanda, and Uganda (China Foreign Relations).

China's investment in Tanzania has hit a record $1.8 billion since President Xi Jinping's visit to the East African country ten years ago. China's direct investment stock in Tanzania is 2.5 times that of 2012. During this period, China has registered 1,908 projects worth $1.6 billion in the mainland and 15 projects in Zanzibar worth $220 million (Zawya).

Clearly, China values its Tanzanian relationship. It is one of the longest ones in Africa. In President Xi's words, China has supported Tanzania even when it struggled with its development in the early 1960s0s. Of so many African countries, Tanzania is perhaps one country where the investments have had a reasonable positive impact on the local population. The reason for this is that China's focus has been mainly on infrastructure development, which allows it access to ports and other facilities, and not extraction and ownership of raw materials and minerals. As a result, when political parties in Tanzania pushed back on "unfair" contracting practices, China was keen to negotiate terms with the political elite to restore their trade and cultural connections. Tanzania is one of China's most prominent supporters when it comes to views on Taiwan, Hong Kong, Xinjiang and other topics of international interest (China Foreign Relations).

C. Huawei's Development Across the Continent

One Chinese sector that has been influential throughout Africa is telecom, led by its industry lead Huawei. Huawei Technologies was founded in 1987 in Shenzhen, China, as a rural sales agent for Hong Kong-based phone and cable network businesses. Between 1996 and 1998, Huawei first expanded into metropolitan areas of China as urban populations exploded. In its early days, Huawei produced telephone communication switches, allegedly built using borrowed designs from Hong Kong. Today, Huawei is the third-biggest global manufacturer of routers, switches, and other telecommunications equipment (Roll).

Huawei's core business can be dissected into three business groups. The first group, the Carrier Network Business Group provides wireless networks, fixed networks, global services, carrier software, core networks, and network energy solutions that are deployed by almost all major communications carriers worldwide. It accounts for roughly a third of the network equipment that runs world communications today. In Africa, it accounts for over 70% of network equipment. The second business group, the Enterprise Business Group, is a perfect complement. Once information is sent and received through "pipes", these data have to be analyzed, translated, stored and saved, by Huawei's data center and storage products. The third group is the Consumer Business Group, which spearheaded the company's push into the personal handset and smartphone segments. Huawei calls this its "pipe strategy", focusing on information storage & processing, Information transportation & distribution and information presentation & creation. Since its early days a large part of Huawei's funding was through concessional loans from various Chinese banks. While other companies competed for the same funding sources and global market share in telecommunication equipment and digital devices, Huawei had access to deep pockets in China and was able to make unencumbered investments without much worry about profitability or competition (Roll).

Telecom, which was not originally envisioned in the original BRI, became an increasingly important part of it. Securing physical resources and associated supply chains was the core part of the original BRI, but increasingly, the digital Silk Road, which Mr Xi declared at the second BRI forum in April 2019 to be a priority for cooperation, is gaining prominence. China, he said, must become a "cyber superpower". That has become the most controversial aspect of the BRI today and is what drives the prominence of Huawei in Africa (Belt and Road Forum).

Digital spending along the Belt and Road still lags that on energy and other hard-infrastructure projects. But, as the Mercator Institute for China Studies in Berlin points out, it is growing fast. The institute has tracked at least $7bn in loans and investment in cables and telecoms networks, over $10bn on e-commerce, mobile payments systems and the like, and more on research and data centers. The digital dimension has expanded hugely from an initial focus on fiber-optic cables to cloud computing, big data and now the so-called "smart city" initiative.

Huawei is at the center of this digital Silk Road transformation. From the fiber optic cables that connect Brazil with Cameroon, to the installation of telecommunication equipment that forms the critical infrastructure for basic communication like phones, Huawei already has an incredible market share globally. Today, it roughly provides 1/3rd of the global critical telecommunication infrastructure gear - cell towers, electronic switches, related hardware and software - while Ericsson and Nokia split the rest of the pie. The fraction of the same infrastructure being provided by Huawei in Africa is north of 70%! Since 2019, a lot of this has been towards building our 4G and 5G capabilities on which solution providers like Google and Meta provide connectivity and access to the African continent. (Moises)

Much like other tech giants in China, Huawei has always had close ties with the Chinese government. While alignment of Huawei's goals internationally with Chinese ambitions in the tech space may be considered coincidental, it is no coincidence that a large part of their international expansion has been due to concessionary loans provided by Chinese banks, which are primarily State sponsored. This allows them to deploy capital and resources without much of a concern for returns in the short and medium term - an approach which is identical to the traditional BRI funding from the previous decade. Through these engagements China is not only able to become the dominant player in critical infrastructure of the present and future, it is also seeking to proliferate cyber security norms and standards which are incongruent with the rest of the world.

Huawei's goals have always been to become a dominant player in the digital infrastructure globally. Since its founding by an ex-PLA serviceman in South China as a phone switch manufacturer in 1987, it has grown into a global tech giant through primarily adopting more efficient cheaper manufacturing processes compared to dominant players like Samsung. While the initial growth and acquisition of intellectual capital has always been sketchy, as a firm it is quite differentiated from other tech giants like Alibaba, Tencent etc. in China. The main difference is that while other Tech giants serve primarily the Chinese domestic market, Huawei managed to compete and dominate the global markets. In terms of growth plans, Huawei is engaging with several African countries to be the partner of choice for building out their digital infrastructure (Miller 271). Their cooperation with Zimbabwe is well known here. The company recently also announced investments of around $300 million towards building out data centers and cloud computing capabilities in the continent.

Cheaper telecoms and easier ways to pay are a welcome boon for African nations. Much like traditional BRI which promised improvements in local education, livelihood, and general societal upliftment as a carrot dangled in front of the local population, there isn't much to show in terms of tangible benefits it has brought to local citizens. For Huawei, Africa represents a pivotal element of the company's growth ambitions, underscoring its unwavering commitment to the continent's digital transformation. This strategy, entitled "Accelerate Intelligence for New Africa", is not just a mere roadmap, but a comprehensive blueprint for Africa's digital and technological future. Given the continent's young population, with 60% aged 25 or younger, digitalization is emerging as a major catalyst for growth in African nations. The strategy is structured around three core action areas: a) Accelerate intelligence to enhance inclusion, thereby expanding the coverage of essential services, b) Accelerate intelligence to enhance governmental management and business, and c) Accelerate intelligence to heighten operational efficiency and productivity across the economy. These ambitious goals are to be achieved by co-investing with governments to own and operate critical communication infrastructure, in exchange for access, which often leads to more control (BusinessWire).

As it happens with these initiatives, it is hard to assess local reactions to these programs. It is, however, true that Africa can hugely benefit from skipping the cable driven connectivity age and move on the modern 5G infrastructure to help create a faster track towards its progress. There are clear signs of growth by looking at statistics like the number of startups in the continent, which has been steadily growing since 2010. However, this has been primarily dominated by Nigeria, Egypt and South Africa, where there is better global investments happening. Other countries in central, west, and east Africa have not seen this kind of opportunity yet. This is primarily where Huawei and China are willing to invest today.

While most other countries and their lending institutions are not able to penetrate other sensitive regions in Africa, China continues to expand its presence through BRI programs, which includes funding for Huawei to expand its digital infrastructure business.On the contrary, China's digital initiatives concern those who care about open societies (The Economist). First, along with Chinese standards some countries are also signing up to its digital authoritarianism. In setting up telecoms systems, Huawei and others happily help states snoop on communications. Without its citizens' consent, Zimbabwe supplies data to China's facial-recognition programmes. That is one reason to predict that rivalry over BRI will in future play out more in the digital realm than in other spheres. A second is that, in tech, a small handful of huge firms dominate. The next 4bn internet users of Africa are a huge prize - which at the moment China is positioning itself to win over with greater certainty (Herlevi). One key aspect of Huawei's growth and hence growth plans for China's digital Silk Road will be Huawei's ability to continue to innovate and produce the hardware and switching equipment going forward. Even today, it is dependent on critical components like Chip design software, latest UV technology etc. on other specialist companies in the US and Netherlands. All of Huawei's chip manufacturing is done by TSMC today, a Taiwanese company. All of this could come to a grinding halt if the global relationship deteriorates between China and other countries, particularly the US (Miller 271).

Overall, the impact of Huawei and its dominant presence in Africa is allowing China again to play a critical role in developing, maintaining and owning critical digital infrastructure in the African continent. Digitization and digital communication is becoming increasingly key in not just developed economies, but even more so in developing and underdeveloped worlds. In fact, establishment of such infrastructure is often allowing poor nations to skip a few generations and to become modern economies. However, doing so on the back of poorly managed loans and bilateral agreements without the scrutiny of international organizations is leading countries to doing so without adequate development in their governance practices to monitor if these programs are leading to true development of these countries. These programs are clearly benefiting the political elite, while leaving the common man behind. The wake up calls like recent occurrences in Sri Lanka are the most feared impending consequences.

III. Analysis

The above case studies illustrate the extent to which investments through the BRI initiatives have been pervasive in the African continent. BRI investments have benefited from existing, sometimes long lasting, relationships that China has cultivated in Africa over several decades. Tanzania is a living example of such a relationship. China has been both a good partner to developing Tanzania since it gained its independence. While Western nations have played roles in Africa primarily through grants, financial aid, and subsidies, China chose to play a role through loan programs. Since 2013, however, China has stepped up its investments through these loan programs in specific sectors across multiple countries in Africa. The intent and modus operandi in all these investments has been similar.

The intent is to secure access to key resources - raw materials, minerals, ores etc., as well as develop infrastructure that can support the shipping, transportation, and processing of these raw materials. Over the years, this has grown to co-owning, maintaining and operating major parts of the supply chains for each of these raw materials leading up to the manufacturing and distribution of the finished products. In Tanzania, China has been a key part of railways, roadways, ports, and other infrastructure development and operation. In DRC, it is the co-owner of several artisanal mines, but more importantly an owner and operator of the supply chain infrastructure which transports, refines the raw materials into their finished products. Almost all precious metals mined out of DRC are today processed in China! This has ensured that China is today the key player in the supply chain of most raw materials in precious metals, energy economy, battery storage as well as EV technology, all of which are essential parts of the transition economy of the future.

The modus operandi has also been remarkably similar. Chinese private sector banks as well as the government provide direct and indirect loans to local African governments as well as their corporations. These loans have been made through opaque bilateral deals, which have mostly resulted in skewed benefits to China over the long run. As most African countries were emerging out of colonial struggles they lacked good governance and social structures to monitor and negotiate these deals to benefit the local populations. This has been further exacerbated by the local political elite being corrupt and opportunistic. As a result, it is the ordinary citizens of these countries that have paid the price. In DRC, for example, there is rampant abuse of cheap labor made to work in dire, often dangerous, conditions. There are credible reports of child labor and many cases of human rights abuses. Although several cases of such abuses, especially in large scale mining operations in the DRC are being addressed by international human rights organizations, it has been hard to do the same in small scale operations which Chinese investments mostly co-own.

The modern day BRI investments, dubbed BRI 2.0, has expanded Chinese investments to establish the “Digital Silk Road”. China wishes to dominate the world digital infrastructure much the same way it has come to dominate the physical infrastructure in major parts of the world (mainly Africa and Asia). A big part of this strategy has been through its support of companies like Huawei, a conglomerate with investments across the digital world. Today Huawei owns and operates a third of the world's digital communication infrastructure. Within Africa and Asia, they provide more than 70% of the same infrastructure. While other competitors such as Samsung and Nokia have had to compete for capital investments, Huawei has benefited from concessional loans and subsidies that have helped Huawei during crucial stages of its growth and expansion over the years. While this in itself is not worrisome, one of the principal worries is that it allows the possibility of China circumventing global communication standards and allowing authoritative practices like unlawful surveillance and monitoring of common citizens by oppressive regimes, leading to continued struggle for vast populations remaining in severe poverty, while favoring the political elite to benefit at their expense.

The gist of these case studies is threefold. First, Chinese relationships in Africa, especially the investments in these countries, are exploitative. This is evident through the DRC mining and supply chain investments which have not yielded any material upliftment of the citizens of the DRC. Second, China has been strategic in its interests across private and public investments alike, targeting key locations and infrastructure which allows them to control crucial ports of entry and internal transport within Africa. The continuing investments in Tanzania is a good example of all this. Third, China has expanded its interests to controlling digital infrastructure of the world, through supporting companies like Huawei, which in laying the foundation for authoritative regimes to create centrally controlled surveillance regimes which are often in conflict with open standards being developed by the rest of the world.

While there is a lot of evidence to support each of the above arguments, the fact remains that the multi-decade investments of China, which has been accelerated through BRI, is a much more complicated relationship for the African people than can be analyzed in this short study. When most big financial institutes like the IMF, World Bank, and post-colonial Western countries turned away from direct investment in Africa, China did play that crucial role. Though there hasn't been the level of improvement in living standards of the local populations because of these investments, whatever little benefit has happened has provided some hope for at least a few regions, like Tanzania. Public sentiment for foreign investment has come full circle in Tanzania where we have seen challenges to Chinese investment practices through a rejection of Bagamoyo port investment plan in 2019. Furthermore, other Western countries have also come back with an intent to invest aggressively in Africa, albeit motivated by the fear of Chinese dominance in regions of the world that has become strategically important for various reasons mentioned in the case studies. This means that there is new hope that this will lead to better competition and provide choices for African nations to choose partnerships that would benefit their citizens more. However, Western countries have to learn to re-engage with African nations by acknowledging their past exploitation of these countries which was one of the principal reasons why they ended up in this precarious position towards the end of the colonial period. Perhaps, the Western interests in Africa should start with giving them an equal status in all investment opportunities. After all, they are now the main resource providers for most of the world for the modern energy economy, as well as the region which will supply the much needed inflow of young working age population for the world.

Conclusion

The case studies presented here make it clear that BRI investment programs in Africa have been successful in meeting their original goals, and in fact have exceeded them, but only from a Chinese perspective. Through collaboration between private sector investments and government sponsored entities like banks, China has established itself as an integral part of supply chains for several important raw materials crucial for today's economy and the transition economy the world is progressing towards. However, the dark side of these investments have led to systematic exploitation of African nations. BRI has significantly contributed to populations in African countries staying exploited. If this continues unfettered, a vast segment of the world population in poor African countries do not have much of a future to look forward to. The rest of the world, including the past colonial rulers, need to come together to make amends and help these nations in charting their future path to prosperity. Clearly, more research is necessary on how this can happen.

In fact, this problem is not isolated to the BRI and Africa. Also, this time is not different. Indeed, the world has seen this repeated over with minor variations over and over again. Exploitation of poor countries has to be of greater concern to the rest of the world. We now have legitimate multi-national organizations like the IMF and World Bank that can play a role in enabling this. These organizations must ensure that investments and engagements in Africa provide equal benefits to all parties involved. It is easier said than done. But, all long journeys start with a single step in the right direction. For their part the African nations involved must at least come together and share their lessons learned. This will help create both stability in the continent, and the much needed solidarity that may help them negotiate better terms in their contracts. Today, Africa has two critical resources that are much needed by most countries in the world - minerals and raw materials that will power the future economy and a still growing young, working age population. It is imperative that African countries pay attention to proper use of both to ensure its own bright future.

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